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# Training Guide for Bird Identification in Pacific Northwest Douglas-Fir Forests



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## Abstract

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Bird calls and songs vary regionally, and some birds emit a variety of sounds. Existing guides are inadequate for training observers to do detailed surveys of bird communities, because more than 90 percent of birds detected are identified by the sounds they emit.

This guide summarizes existing guides and adds the observations of the compilers and other technicians who participated in extensive surveys. Four-letter codes for species names, taken from the American Ornithologists' Union, are included. A checklist by region (southern Washington, Oregon Cascade Range, Oregon Coast Ranges, and northwestern California) of birds found in Douglas-fir (*Pseudotsuga menziesii* (Mirb.) Franco) forests west of the crest of the Cascade Range completes the guide.

Keywords: Bird calls, Pacific Northwest, Douglas-fir forests.

## Foreword

This training guide was developed, in part, during my research on spring bird communities in the Oregon Coast Ranges, because no existing guide was adequate for training field crews. S. Kim Nelson put together a first draft by using a guide developed by Bruce Marcot (unpublished). Paul Sullivan and Robert Kuntz then expanded on Nelson's draft. Finally, Christopher Chappell added material to cover the Cascade Range in southern Washington.

The usefulness of the guide is in the written descriptions of bird calls, unencumbered (as much as possible) by superfluous text. The guide should be used as a dictionary. And it should be used in conjunction with field guides and recordings of bird calls and songs. Recordings specific to the region should be used whenever possible. Species are listed in taxonomic order to be compatible with field guides. Letter codes after the descriptions refer to references cited on pages 24 and 25. A checklist of species is included to further aid the novice in identifying species through the process of elimination and to aid the expert in recognizing unusual occurrences of birds.

Andrew B. Carey



## Descriptions of Vocalizations

Vocalizations (or other sounds) of each species are classified as having territorial (T) or nonterritorial (N) functions. The descriptions of bird sounds are credited to authors of field guides or to field observers by parenthetical codes that follow the text (see Literature Cited).

### Osprey (OSPR)<sup>1</sup>

- N: 1. A melodious series of whistles, CHEWK CHEWK-CHEWK (H); a rising series of shrill whistles given singly and in series, WHEW-WHEW-WHEW-WHI-WHI-WHI (FO).  
2. A ringing alarm call, KIP-KIP-KIP-KIWEEEEK-KIWEEEEK (H).

### Northern Goshawk (NOGO)

- T: Nest-defense call is a series of short high KAK's (R); higher pitched, shriller, more forceful than Cooper's Hawk, with hard A-sound as in "bat" (FO).  
N: 1. Food-begging call is a high-pitched gull-like KREEAH (B), sometimes uttered repeatedly about once per second (FO).  
2. A loud KYOW (FO).

Warning: Gray and Steller's jays can expertly imitate all accipiter vocalizations: visual verification of NOGO in a stand is recommended (FO).

### Cooper's Hawk (COHA)

- T: A rapid KE-KE-KE, etc., suggests flicker (P); lower pitched. Less shrill than goshawk and Sharp-shinned Hawk, or CA with soft A-sound as in "about" (FO).  
N: A high-pitched PEE-A, PEE-A, PEE-A (L).

### Sharp-shinned Hawk (SSHA)

- T: A high, shrill KIK-KIK-KIK, etc. (P,H), sometimes dropping in pitch (FO); higher pitched than Cooper's Hawk, less forceful than goshawk (FO).  
N: Juveniles utter a shrill WREE, WREE, WREE with each note rising in pitch (FO).

### Red-tailed Hawk (RTHA)

- T: 1. An asthmatic squeal KEEER-R-R-R slurred downward (P); hoarse, rasping scream, TSEE-EEEE-ARR, lasting 2 or 3 seconds (H).  
2. Juveniles give a hoarse REE, REE, REE with each note slightly ascending in pitch (FO).

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<sup>1</sup> English names follow American Ornithologists' Union 1983.



### **Prairie Falcon (PRFA)**

- N: 1. A yelping KIK-KIK-KIK, etc. (F,H); a loud KREE-KREE-KREE (U).  
2. Variety of wails and whining cries during courtship (F).

### **Peregrine Falcon (PEFA)**

- N: 1. A rapid, rasping KEK-KEK-KEK, KE-EK, etc. (P,L); HAK HAK HAK HAK (F).  
2. A round eyrie, a repeated WE-CHEW (P).  
3. A variety of wails and crys during breeding season (F).

### **American Kestrel (AMKE)**

- N: 1. A rapid high KLEE KLEE KLEE or KILLY KILLY KILLY (P,R,L).  
2. During courtship, a variety of whining cries and chitters.  
3. CHUCK-CHUCK-CHUCK (H).

### **Blue Grouse (BLGR)**

- T: Series of 5 to 7 low, muffled, booming or hooting notes about one octave lower than a Great Horned Owl, ventriloqual (P); hoots have a quality suggesting the sound of a large rock tossed into a pool of water (FO).  
N: Clucking and cackling by female (F).

### **Ruffed Grouse (RUGR)**

- T: Drumming is a hollow-toned, low-pitched, accelerating series of beats made with the wings, suggests a motor starting: muffled thumping starts slowly, accelerating into a whirl: BUP...BUP...BUP... BUP...BUP..BUP.BUP.UP.R-RRR (P).  
N: 1. Series of sharp notes when alarmed on the ground (U).  
2. Assorted, seldom-heard clucks and hisses (F).  
3. A loud CHUCK (F).

### **California Quail (CAQU)**

- T: 1. Three-syllable call, QUA-QUER-GO or WHERE ARE YOU? or CHI-CA-GO with middle syllable accented (P).  
2. A loud KERR or TWERK (P); a single CAH (F).  
N: 1. A soft PIT-PIT-PIT, etc., in flocking (L).  
2. Light clucking notes (P).

### **Mountain Quail (MOQU)**

- T: A loud, mellow cry WOOK? or TO-WOOK? (P); a repetitive pygmy-owl-like hoot, if close, actually 2 notes, not as monotonously delivered as the pygmy-owl's, given at 4- to 9-second intervals, hollow quality (FO).  
N: 1. A hollow, mellow POCK, POCK, POCK, often given repeatedly (FO).



### **Mountain Quail (MOQU), continued**

2. Rapid, tremulous whistling sounds when alarmed (P).
3. A churring call, KKDDD-KE-KE-KE, may escalate to a screech.<sup>2</sup>

### **Wild Turkey (WITU)**

- N:
1. Gobbling of male like a domestic turkey (P).
  2. Alarm, PIT! or PUT-PUT! (P).
  3. Flock call, KEOW-KEOW (P).
  4. Hen clucks to brood (P).

### **Marbled Murrelet (MAMU)**

- N:
1. Flight call a sharp KEER-KEER (U); two distinct, ascending, unbroken, flutelike notes no more than a second in duration (M).
  2. Buzzy or soft calls at presumed nesting sites (M).

### **Band-tailed Pigeon (BTPI)**

- T: Low-pitched, two-toned cooing, WHOO-WHOOOO, often given several times in succession (F); lower in pitch than all owls of this area except Flammulated Owl (FO).
- N:
1. A soft, rather high-pitched rapid chirring or trilling given in flight (FO).
  2. A loud, regular flapping of wings as the bird flies from a treetop perch (FO).

### **Mourning Dove (MODO)**

- T: Hollow, mournful OOAH, COOO, COO, COO with only three COO's audible at a distance (P); with sharply rising, inflected second syllable, all other notes on same pitch but last three dropping slightly in pitch at end of each (F).

### **Western Screech-Owl (WSOW)**

- T: Series of hollow whistles on one pitch, separated at first but then running into a tremulo (like the rhythm of a small ball bouncing to a standstill) (P).
- N:
1. Two-syllable, trilled whistle PDDDD, PD\DDDD with the second descending in pitch (FO).
  2. A harsh, squeaky EEKIT, EEKIT (L).
  3. Juveniles give a nasal WAYH, WAYH, WAYH, WAYH with each succeeding note lower in pitch, suggests Acorn Woodpecker (FO).

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<sup>2</sup> Personal communication, R. Gutiérrez, College of Natural Resources, Department of Wildlife, Humboldt State University, Arcata, California 95521.

### **Flammulated Owl (FLOW)**

T: A low-pitched mellow HOOT or HOO-HOOT, repeated steadily at intervals of 2 to 3 seconds (P); voiced, not whistled, most similar to Band-tailed Pigeon (FO).

### **Great Horned Owl (GHOW)**

T: A resonant hooting of 3 to 8 notes, males HOO, HOO-OO, HOO, HOO, females HOO, HOO-HOO-HOO, HOO-OO, HOO-OO (P); deeper and lower than Spotted or Barred Owls (F).

N: A wide variety of screams, hoots, catlike meows and bill-clicking (F).

### **Barred Owl (BAOW)**

T: 1. Hooting more emphatic than that of a Great Horned Owl, not so deep, usually 8 hoots in 2 groups of 4, HOOHOO-HOOHOO-HOO-HOO-HOOHOOAW (P); WHO-COOKS-FOR-YOU, WHO-COOKS-FOR-YOULL (S).

2. Occasionally a long series of hoots and A-A-A notes (FO).

### **Spotted Owl (SPOW)**

T: 1. High-pitched hooting, like barking of a dog, usually in groups of 3, HOO-HOO, HOOO, or four, HOO, WHO-WHO, WHOOO (P); last note drawn out and descending in pitch, females call higher in pitch (FO).

2. A rising inflection of WHOO, WHOO, HOO, HOO, HOO, HOO-HOOT-HOOT, HOO-HOOT-HOOT, cut off at end or terminated with a descending HOOOO.

N: 1. A shrill KRE-ICK! KRE-ICK! (FO).

2. A whistle that rises most abruptly at end and cuts off sharply WHEEE-ET! or COOO-WEED! (FO).

3. A crowlike bark KHAW, KHAW KHAW given by female (FO).

### **Northern Saw-whet Owl (NSOW)**

T: A mellow whistled note repeated mechanically in endless succession, usually 100 to 130 times per minute, TOO-TOO-TOO etc. (P); higher pitched and faster than pygmy-owl (FO).

N: 1. An upslurred whistle (U).

2. A raspy call like the sound of a saw being sharpened (S).

### **Northern Pygmy-Owl (NPOW)**

T: 1. A single, mellow whistle, HOO, repeated every 1 to 2 seconds (P); may be confused with a Douglas' squirrel call from afar; may be mimicked by Gray Jays.

2. A rolling series, ending with 2 to 3 deliberate notes, TOO-TOO-TOO-TOO-TOO-TOO-TOO-TOOK-TOO-TOOK (P); often followed or preceded by single whistle notes (FO).

N: A thin rattle around the nest (U); high pitched and thin, suggestive of Brown Creeper but with a slight roll or rattle (FO).



### **Common Nighthawk (CONI)**

- T: In aerial display, male dives earthward, then zooms up sharply with a sudden deep whir (P).
- N: A nasal PEENT or PEE-IK (P); strongly accented at beginning and end of note (FO).



### **Vaux's Swift (VASW)**

- N: 1. A feeble chipping call (P); a soft high-pitched insectlike twittering; single notes of similar quality, can be confused with soft, short notes of Golden-crowned Kinglet or Brown Creeper (FO).
2. Rapid repeated series of staccato chips (F); accelerates toward end (FO).

### **Black Swift (BLSW)**

- N: A sharp PLIK-PLIK-PLIK, etc. (P); TWIT, TW T, TWIT, etc. (U).

### **Allen's Hummingbird (ALHU)**

- T: Nearly identical to sounds of Rufous Hummingbird (F); in pendulum part of display flight, an air-splitting VRRRIP at bottom of dive (P).
- N: Calls identical to Rufous; wing buzz of adult males may be slightly higher pitched than Rufous (F).

### **Rufous Hummingbird (RUHU)**

- T: A strident, stuttered, V-V-V-V-VVRIP at bottom of display flight dive (P); stuttered character precedes sound at bottom of dive (FO).
- N: Similar to Allen's.
1. A sharp BZEE (R).
  2. Squeaks and light chips (P).
  3. An excited ZEEEE CHUPPITY-CHUP (U).
  4. Wing buzz of male Rufous and Allen's have a heavy ZZ-ZZZ-ZZ-ZZZ quality, unlike other hummers, lighter than Anna's (FO).

### **Anna's Hummingbird (ANHU)**

- T: 1. Male's song is a jumble of high squeaks and raspy notes (S); a series of squeaking, grating notes (P); the only California hummingbird with a real song (from perch) (R).
2. Diving in aerial display, a sharp popping sound at the bottom of its dive (P).
3. Chase call is a rapid dry rattling (S).
- N: A sharp CHICK (S).

### **Calliope Hummingbird (CAHU)**

- T: A brief PFFT in display flight (P); a very high ZING (F); a high-pitched PFFT-TEEWWWW with the second syllable descending in pitch (FO).



### **Calliope Hummingbird (CAHU), continued**

- N: 1. TSIP (P); very high-pitched TSEW (F).  
2. Twittering calls (F).

### **Northern Flicker (NOFL)**

- T: 1. Drums rather weakly in short bursts (F); constant, rhythmic (FO).  
2. A loud WICK WICK WICK, usually repeated more than 10 times (P); 6 notes per second, similar to Pileated Woodpecker, but sharper, higher pitched and somewhat tinnier sound, does sometimes slow or soften at end (FO).
- N: 1. A single, loud KLEEEEOO, very sharp, descending in pitch (FO); a loud KLEE-YER (P).  
2. A squeaky FLICK-A FLICK-A FLICK-A (P), WIK-A WIK-A WIK-A (FO).  
3. A guttural flutter call, sounds like wings beating, given from perch (FO).

### **Pileated Woodpecker (PIWO)**

- T: 1. Drumming very loud, slow, softer at end (R).  
2. A fast KEK KEK KEK, usually repeated 12 times or less, similar to flicker, but lower, louder and richer, sometimes drops off in pitch or speed at end but ends abruptly (FO).
- N: Variable, long WUK-WUK-WUK series, slow, irregular (F); may be described as KUK or KEK, series often changes pitch, volume, or speed (FO).

### **Acorn Woodpecker (ACWO)**

- T: Constant, rhythmic drumming (FO).
- N: WHACK-UP, WHACK-UP, WHACK-UP (P); a nasal ratchety WANKA WANKA WANKA, etc., a "laughing" call, may include other nasal-quality chatter (FO).

### **Lewis' Woodpecker (LEWO)**

- T: Drums weakly (F).
- N: A harsh CHURR (F,L) or CHEE-UR (P).

### **Red-breasted Sapsucker (RBSA)**

- T: Drumming is several rapid thumps followed by slow rhythmic ones (P); not a constant rhythm, spurts of 3 to 4 taps with pauses between, starts with long series, ends with sequence of short bursts, "always gives the nail one last tap" (FO).
- N: 1. A nasal mewing note or squeal, CHEERRR, slurring downward (P), CHEE-AA (F).  
2. CHUR or QUARR, given in series (F).

### **Hairy Woodpecker (HAWO)**

- T: Drumming similar to Downy Woodpecker except louder (F); a very rapid burst of constantly rhythmic taps (FO).
- N: 1. A loud, sharp PEEK! (P,R).  
2. A kingfisherlike rattle, run together more than Downy's (P,R); does not descend in pitch (FO).  
3. WICK-A (F); squeaky short series of WICK-A notes similar to flicker (FO).

### **Downy Woodpecker (DOWO)**

- T: Drumming is like Hairy Woodpecker but softer (FO).
- N: 1. A flat PICK, not as sharp or loud as Hairy's (P).  
2. A rapid whinny of notes, descending in pitch (P); slightly slower than Hairy's notes quicken toward end.

### **Black-backed Woodpecker (BBWO)**

- T: Drumming increases in tempo toward end (U).
- N: A sharp KIK or CHIK, also in series (P), a sharp KYIK or TSHICK (U).

### **White-headed Woodpecker (WHWO)**

- T: Drumming is a short, even series (U).
- N: 1. A sharp CHICK, sometimes rapidly repeated CHICK-IK-IK-IK (P); most common is two-noted PEEK-IT, with quality of Hairy Woodpecker (FO).  
2. A rattle similar to Downy's (P) and Hairy's (F).

### **Willow Flycatcher (WIFL)**

- T: A sneezy FITZ-BEW (P).
- N: 1. A liquid WIT (N) or WHIP (FO).  
2. A rising BREEET (N).

### **Hammond's Flycatcher (HAFL)**

- T: SEPUT, PZRRRT, TREEIP (R); very emphatic, most notes low and burry, without clear slides, SEBIT! DJURRP!, DJURREET! (sequence varies) (F); resembles Dusky Flycatcher but hoarser, more emphatic (S); middle note almost identical to Dusky's but with heavier or rougher quality (FO).
- N: 1. A short, sharp CLICK or PIC, recognizable as first part of song but only one syllable (FO).  
2. WHIT (P,U); suggests Yellow-rumped Warbler (FO).  
3. TWEET (P) or HEEP (F), sometimes given repeatedly at about 50 to 60 per minute (FO).



### **Dusky Flycatcher (DUFL)**

- T: 1. Song nearly identical to Hammond's Flycatcher but has a lighter and drier quality (FO); CHEEPIT, CHUWEE, PSEET (R); combines snappy, burry and clear ascending notes, SABIT! DJUREE! PSWEE! (sequence varies) (F).
2. A diagnostic call is a mournful, sharp DEEW, DEEW, DEEW-WHIP!, number of both note types varies (F); a musical DU-HIC or DU DU-HIC, the HIC being higher pitched and very quick (FO).
- N: 1. Soft WHIT (R,F); very similar to Hammond's (FO).
2. A two-syllable SEE-LICK, recognizable as first part of song (FO).

### **Western Flycatcher (WEFL)**

- T: PSEET-TRIP-SEET? (P); high, thin, squeaky whistles and snappy notes PE-SEE! PIT-TIC, SEE (F); a series of 3 detached notes, TSEE-DICK, TSEEP, TSEE-EET, last note slurred upward, often repeated several times, sequence varies, higher pitched with a sharper, cleaner quality than Hammond's and Dusky Flycatchers (FO).
- N: 1. A sharp, lisping PSEET? with rising inflection (P); a thin, quick-whistled SEE-O-WHEET, the last syllable with a rising inflection (FO); the male position call (D).
2. A sharp, metallic CHIP or TING (L); often repeated monotonously between pauses of 1 second or more (FO); the female position call (D).
3. A soft, but explosive, liquid roll of a not BR-R-R-RP, usually repeated 2 to 5 times in fairly rapid succession (FO).

### **Western Wood-Pewee (WWPE)**

- T: A slurred HEE-ZA-WIP, PUR-DEE, rises on the first phrase and falls on the second (L); a mixture of TSWEE-TEE-TEET phrases and descending PEEER notes (N); rolling three-syllable rising phrase accented on first and third notes, followed by longer descending note (FO).
- N: 1. A nasal, PEEEEER (P); a burry, descending PHEEER, given every 5 to 10 seconds (F).
2. A nasal, slightly burry ZHUWEE or PHEEWEE slurred upward, often repeated monotonously about once every 1 to 2 seconds, similar to ZUWEEP of Hutton's Vireo but quality is different, slightly longer in duration, less sharp, not so clipped-off at end (FO).

### **Olive-sided Flycatcher (OSFL)**

- T: A loud, spirited, melodious whistle QUICK-THREE-BEERS!, middle note highest, last sliding (P).
- N: A trebled PIP-PIP-PIP (P,R); also in two's (L).

### **Tree Swallow (TRSW)**

- N: 1. A liquid twitter (P).  
2. CHEET or CHI-VEET (P); a liquid CHWEET (U).  
3. WEET, TRIT, WEET, repeated with variations (P).

### **Violet-green Swallow (VGSW).**

- N: All calls "drier" in quality than Tree Swallow, not as thin as a swift (FO);  
1. A thin CHIP or CHIT-CHIT (P).  
2. A rapid CHIT-CHIT-CHIT WHEET WHEET (P).  
3. A twitter (P).

### **Northern Rough-Winged Swallow (NRSW)**

- N: A harsh TRRIT (P); a rough, rasping, rather hard BRRRTT, often repeated several times (F).

### **Barn Swallow (BASW)**

- N: 1. A soft BIT or KVIK-KVIK-, VIT-VIT (P).  
2. A long musical twitter interspersed with gutturals (P).

### **Cliff Swallow (CLSW)**

- N: 1. A low CHUR (P).  
2. KEER alarm note (P); a nasal NYEW (F).  
3. A series of creaking notes and guttural grating, harsher than Barn Swallow (P).

### **Gray Jay (GRJA)**

- N: 1. A soft WHEE-AH (P); a whistled WHEEOO (R).  
2. A low CHUK (S).  
3. A great variety of other notes, some harsh, some musical (P,U).  
4. Mimics goshawk (can be impossible to distinguish) and pygmy-owl (pygmy-owl continues whistling monotonously, jay does not keep it up for long) (FO).

### **Steller's Jay (STJA)**

- N: 1. A loud SHOOK-SHOOK-SHOOK or SHACK-SHACK-SHACK (P).  
2. KWESH KWESH KWESH (P); slower than call number 1, very coarse (FO).  
3. Many other notes (P).  
4. Mimics hawks (P).  
5. Sometimes taps on trees, sounding like a foraging woodpecker (FO).

### Scrub Jay (SCJA)

N: Calls higher pitched than Steller's Jay (R).

1. A rasping SHREEK or SHRINK (P); loud, throaty JAYY? or JREE? (U); with rising inflection (FO).
2. Rough rasping notes, KWESH...KWESH (P).
3. Harsh CHECK-CHECK-CHECK-CHECK (P).

### Common Raven (CORA)

- N: 1. Very hoarse, low-pitched croaking notes, CROCK and QUAK (F).
2. KLOO-KLOK (U); a hollow, wooden knocking sound (FO).
  3. A metallic TOK (P).
  4. A variety of other sounds (FO).

### American Crow (AMCR)

N: A loud CAW or CAH or KAHR (P); given singly or in series (F).

### Black-capped Chickadee (BCCH)

T: A clear whistle, FEE-BEE, first note higher (P); slow, melancholic (U); sometimes 3 notes FEE-BEE-EE, first note higher (N).

- N: 1. CHICK-A-DEE-DEE or DEE-DEE-DEE (P).
2. SIBIT and other short notes similar to Chestnut-backed Chickadee but with "black-cap quality" (FO).

### Chestnut-backed Chickadee (CBCH)

- N: 1. TSICK-I-SEE-SEE or ZHEE-CHE-CHE, hoarser than Blackcapped Chickadee (P).
2. A harsh ZEE or ZZE-ZZE (P).
  3. SK-DIP or SIBIT often repeated rapidly in succession about 3 times, not as hoarse or buzzy as above calls (FO).
  4. A short TSIP, similar in quality to call number 3, but shorter, can be confused with notes of Golden-crowned Kinglet but has a slight two-syllable effect or roll (FO).
  5. A high-pitched, clear, fast series of notes similar to those of Golden-crowned Kinglet and Brown Creeper, but lacks tonal clarity of either (FO).
  6. A high-pitched, creeperlike note, descending in pitch throughout and lasting about 1 second, repeated between brief pauses (FO).



### Mountain Chickadee (MOCH)

T: Three high, clear whistled notes, FEE-BEE-BEE, first note highest, next two on same pitch, or 3 to 4 notes going down the scale in half tones (P).

N: TSICK-A-ZEE-ZEE-ZEE, hoarser than Black-capped Chickadee (P); slower, more nasal than Chestnut-backed, ZICKA-DYA-DYA-DYA (L).



### **Bushtit (BUSH)**

- N: 1. Insistent light TSIT's, LISP's and CLENK's (P); high, thin, fussy notes (R).  
2. Alarm call is a high trill (U).

### **White-breasted Nuthatch (WBNU)**

- T: A series of low, nasal, whistled notes on the same pitch, WHI, WHI, WHI, etc., or WHO, WHO, WHO, etc. (P); TO-WHAT WHAT WHAT WHAT (F).  
N: 1. A nasal YANK (P); lower in pitch and less nasal than Red-breasted Nuthatch.  
2. A nasal TOOTOO (P).  
3. Low, nasal AWH, AWH, notes single or in slow series, sounds like a distant crow (FO).

### **Red-breasted Nuthatch (RBNU)**

- N: 1. A nasal ANK or ENK, higher in pitch and more nasal than White-breasted, often repeated at 70 to 120 per minute, volume extremely variable, difficult to judge distance (FO).  
2. Light twittering notes with a musical, nasal quality (FO).  
3. Foraging sounds are similar to the soft pecking of a woodpecker (FO).

### **Brown Creeper (BRCR)**

- T: A thin, sibilant SEE-TI-WEE-TU-WEE (P); clear, very high-pitched SEE SEE SEE-O-WHEE SEE-O-WHEET, pattern variable, often with 1 three-syllable note at end, usually with 2 single notes at beginning (FO).  
N: 1. A single, double, or triple SEEEE, high and thin, almost a pure tone, similar to Golden-crowned Kinglet but most often doubled (like double beeps of electronic digital watches), of clearer tone, with a slightly piercing quality (FO).  
2. Very light notes similar in quality to call number 1 but shorter, softer, often jumbled into a twitter, extremely similar to call number 2 as kinglet (FO).  
3. Series of notes given in rapid succession TEE-TEE-TEE, etc., like a small bell ringing (FO).

### **House Wren (HOWR)**

- T: Stuttering and gurgling song, rising in a burst, falling at the end (P); a hurried descending TSEE-TSEE, WHEEDLE-WHEEDLE-WHEEDLE, WIDDLE-WIDDLE-WIDDLE, sometimes ending with an upward slurred CHUR-WEE (L).  
N: 1. A rapid churring note (P); a loud TRRR (U); descends in pitch, often doubled, sounds somewhat like a finger running over the teeth of a comb, often given as introductory note of song (FO).

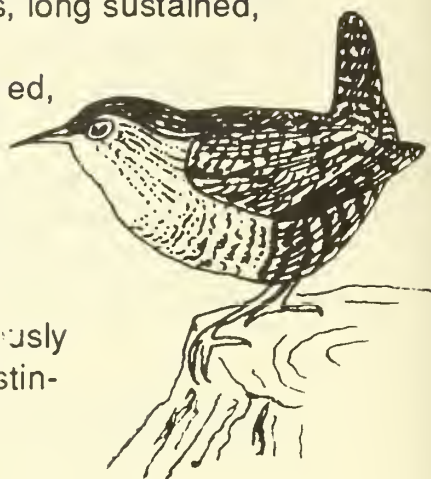
## House Wren (HOWR), continued

2. A harsh scold (P); a harsh buzz (U); a buzzy B:SHHHH (FO).
3. A whining call (F).

## Winter Wren (WIWR)

T: A rapid succession of high tinkling warbles and trills, long sustained, often ends on a very high light trill (P).

- N: 1. A low, double TICK-TICK (R); not always doubled, has a dry has a dry quality, also described as CHICK, may shrink these notes together into a chatter or trill (FO).
2. A soft rattle, suggesting a wrenit, but sharper, more drawn out (FO).
  3. Wiry SEEEE, SEEEE, etc., repeated monotonously by juveniles, slight roughness and repetition distinguish it from Brown Creeper (FO).



## Bewick's Wren (BEWR)

T: Variable, high opening notes, followed by lower burry notes, ending on a thin trill, suggests Song Sparrow, one version is SWEE SWEE CHEEEEEEE (first and second notes high, last trilled) (P); another version is a bright SISTER, SWEET, SWEET, SWEET (L); another PINK, BZURP, TEA-TEA-TEA-TEA-TEA (FO).

- N: 1. A harsh long drawn-out buzz (U); a rasping scold (FO).
2. Harsh, loud chattering ratchet, louder than a Wrenit (FO).
  3. Harsh VIT, VIT, VIT (U); sharp WHIT-WHIT or BSHT (L).

## Wrenit (WREN)

T: Staccato ringing notes of one pitch, starting deliberately and running into a trill, YIP-YIP-YIP-YIP-YIP-YIP-YTR-TR-TR-TR-TR-TR-R-R-R-R-R-R (P); female song is untrilled single notes often at 3/4-second intervals, speeding toward end, speed and strength variable (FO).

N: A low, rattleslike, churring noise (F); a chatter or scold, ratchety (FO).

## American Robin (AMRO)

T: Clear caroling, short phrases, rising and falling, (P), a series of 6 to 10 whistled phrases of 3 to 4 notes (R); slower, less hoarse than Western Tanager; more rapid than Solitary Vireo; slower, less varied and fluent than Black-headed Grosbeak; clear, bell-like tonal quality (FO).

- N: 1. A loud TYEEP (P).
2. TUT-TUT-TUT (P).
  3. A chattering, guttural series of WISK notes (FO).
  4. A whisking SEE-LIP (U); sometimes heard only as SSEET, often given in flight, suggests Cedar Waxwing, but individual notes distinct, not slurred together in a series (FO).



### Varied Thrush (VATH)

T: A long, eerie, quavering, whistled note, followed after a pause by one on a lower or higher pitch (P).

- N: 1. A soft TOOK (S); low, heavy KYUP can be confused with Hermit Thrush's CHUCK but lower pitched and less forceful (FO).  
2. Loud, harsh, unmusical rattle when disturbed (FO).  
3. Drawn-out whistled hums similar to song, but of shorter duration, less emphatic, less musical, sometimes slowed into a trill (FO).



### Hermit Thrush (HETH)

T: Clear, ethereal, and flutelike phrases on different pitch levels, each phrase preceded by a long introductory note a deliberate pause between each phrase (P).

- N: 1. A low CHUCK (P); similar to Varied Thrush but higher pitched and more forceful, sharper (P).  
2. A nasal WHREEEE, rising in pitch, suggests Rufous-sided Towhee, but shriller, with a double tone quality (FO).

### Swainson's Thrush (SWTH)

T: Melodious, breezy, flutelike phrases, distinguished by tendency of each phrase to climb upward (P); spirals upward (FO).

- N: 1. WHIT (P); short, sharp, whistled with a rushing air quality (FO).  
2. A clear loud whistle, longer in duration than call number 1, slightly rising in inflection, identical to opening note of song, occasionally ending in a rolling rattle or chatter (FO).

### Townsend's Solitaire (TOSO)

T: A long warble similar to Black-headed Grosbeak, but more rapid (P); phrases of song run together, a few buzzes and trills not found in grosbeak song, usually longer in duration than grosbeak's, also suggests Purple Finch but longer, with more variety, slower (FO).

- N: A single piping note (R); bell-like HEEP, suggests pygmy-owl but pitch-piped, weaker, higher pitched, sometimes repeated 30 to 40 times per minute (FO).

### Western Bluebird (WEBL)

T: A warble (F); FEW FEW FAWEE (S); sung only at dawn (FO).

- N: 1. PHEW (U); slightly descending in pitch, abbreviated with a springy quality (FO).  
2. A hard chattering note (P).  
3. A harsh CHUCK (U,F).

### Mountain Bluebird (MOBL)

T: A short, subdued warble (P).

- N: 1. A thin FEW (S); soft low PEW (L).  
2. A low, warbled TRU-LEE (S).

### Golden-crowned Kinglet (GCKI)

T: A series of high, thin notes (similar to call notes) ascending in pitch and then running into a descending chickadeelike chatter (P,R); may be confused at a distance with Chestnut-backed Chickadee chatter but lighter in quality (FO).

- N: 1. A high, wiry SEE-SEE-SEE (P,L); not always in three's; similar to creeper but less piercing, with wheezy, buzzy, or wiry quality and without pure tone of Brown Creeper (FO).  
2. Very light SEE notes, very short, soft, often jumbled into a twitter, very difficult to distinguish from creeper (FO).



### Ruby-crowned Kinglet (RCKI)

T: Quite loud, 3 to 4 high notes, several low notes, and a chant, TEE TEE TEE, TEW TEW TEW, TI-DADEE TI-DADEE- TE-DADEE, variable (P); hesitant start of single notes accelerates into a 2- or 3-note gallop (FO).

- N: 1. A husky JI-DIT (P); reminiscent of Winter Wren's TICK-TICK, but lighter in quality (FO).  
2. A continuous light chatter similar to JI-DIT but run together (FO).

### Cedar Waxwing (CEWA)

N: A high, thin lisp or ZEEE, sometimes slightly trilled (P); a very high thin monotone, generally with a slight quaver that distinguishes it from Brown Creeper, robin has similar flight call, but waxwing's are slurred together and of longer duration (FO).

### Hutton's Vireo (HUVI)

T: 1. ZU-WEEP, with rising inflection, often continuously repeated (P); sometimes more like BALEEP or PREE, buzziness varies, usually repeated monotonously, can be confused with Western Wood-pewee but shorter, sharper, more abrupt, usually more distinctly 2-noted (FO).

2. A descending buzzy DZEOO, DZEOO, etc.; also monotonously repeated.

- N: 1. A thin, rising WHEEZZZ or WHIZZZ or ZZZHH with a somewhat wavering quality (FO).  
2. A low CHIT; weak VHIT or WHIT, similar to a weak Black-headed Grosbeak call (FO).  
3. A hoarse, deliberate DAY-DEE-DEE (P).  
4. A clear, whistled TEE-O-WHEET, suggests Western Flycatcher, but more musical, first syllable more distinct (FO).

### **Hutton's Vireo (HUVI), continued**

5. A buzzy monotone BZZZZT, with an insectlike quality, given by fledglings when begging for food (FO).
6. Harsh, buzzy RARHN, RARHN, RARHN suggests Rufous-sided Towhee, but buzzier, higher in pitch (FO).

### **Solitary Vireo (SOVI)**

- T: Short, whistled phrases, with rising and falling inflection, rendered with a short wait between phrases (P); slow, slurred phrases, conversational, as if asking a question, then answering, ZOOWEE, ZEEYOO, etc. (FO).
- N: Harsh scold note (F); harsh CHR, CHR, CHR (U).

### **Warbling Vireo (WAVI)**

- T: A languid warble, suggests Purple Finch, but less spirited, with burry undertone (P); slower than finch, alternates high and low notes in phrases to give an up-and-down or galloping feeling to song, TI-DI-DUMP TI-DI-DUMP rhythm (FO).
- N:
  1. Soft VIT (U); suggests Black-headed Grosbeak but softer.
  2. A soft, wheezy, querulous TWEE (P).
  3. A monotone buzz, DZZZZZZ, increasing in volume, associated with dry, somewhat buzzy chips, CHT (FO).
  4. A harsh ratchetlike rattle, may slightly ascend or descend in pitch (FO).

### **Orange-crowned Warbler (OCWA)**

- T: A weak, colorless trill, dropping in energy at the end, often changes pitch, rising, then dropping (P); suggests Dark-eyed Junco except for changes in pitch and volume (FO).
- N:
  1. A sharp STICK (U).
  2. A high, thin SEET (FO).

### **Nashville Warbler (NAWA)**

- T: Two-parted SEEBIT, SEEBIT, SEEBIT, SEEBIT, TITITITITI (ends like Chipping Sparrow's song in rapid trill) (P); second part sometimes omitted (R); alternate descriptions of notes in first part are SWEETA, SWEET, TEE-TU and WEE-TA, for second part TEW and SWEET (FO).
- N: Short, not very sharp, tonal CHIP, similar in quality to MacGillivray's Warbler but lighter (FO).

### **Yellow Warbler (YEWA)**

- T: A cheerful, bright TSEE-TSEE-TSEE-TSEE-TITI-WEE, given rapidly, variable (P); usually 3 to 4 well-spaced TSEET notes followed by a more rapid SITTA-SITTA-SITTA-SEE (F); SWEET SWEET SWEET I'M SO SWEET (FO).
- N: A sharp CHIP or CHIK (L).



### **Yellow-rumped Warbler (YRWA)**

T: SWEETA-SWEETA-SWEETA-SWEETA-SWEETA-LEETALEET, not buzzy, usually rises, sometimes falls, in pitch or inflection, quickens pace toward end, oscillating like a miniature ambulance siren WEE-OO-WEE-OO-WEE-OO (FO).

N: A loud TCHIP (P); CHEP (U); not as heavy as MacGillivray's Warbler or as dry as Nashville or MacGillivray's (FO).

### **Black-throated Gray Warbler (BGWA)**

T: Two basic types

1. Most common type in Washington is always buzzy, a slow ZEE-A, ZEE-A, ZEE-A, ZEE-A (-ZEET) or WEE-ZY WEE-ZY WEE-ZY WEE-ZY (-WEET), rises gradually in pitch, each phrase a step higher than the last; Hermit and Townsend's Warblers sometime have rising buzzy songs also, but without steplike character (FO).
2. Much more rapid, usually buzzy, pattern somewhat variable, most common type in northwestern California transcribed as ZEEDLE-ZEEDLE-ZEEDLE-ZEEDLE ZEET-TZEW-ZEET-TZEW, the ZEEDLE's very fast, often slurred together, the 4 last notes longer in duration, more distinct, with up-and-down pattern, always opens with ZEEDLE's or ZEEDLE's or TEEDLE's, number and pattern of ending notes variable; difficult to distinguish from Hermit and Townsend's (FO).

N: 1. A sharp CHIP almost identical to Hermit (FO).  
2. A dull CHUT, intermediate between calls of Yellow-rumped and Townsend's (FO).

### **Hermit Warbler (HEWA)**

T: Pattern and cadence highly variable, closely resembles Black-throated Gray and Townsend's Warblers; two general forms most common, fast and slow.

1. Fast type, mostly buzzy, typically with a fast introductory phrase, an accented note, and two lower ending notes with clear tone ZEEDLE-ZEEDLE-ZEEDLE-ZEEDLE-ZEET-CHE-CHE or ZEE-ZEE-ZEE-ZOO-CHUP-CHUP, number of notes in each part variable, sometimes without middle accented note (FO).
2. Slow type, not as buzzy, WHEETO-WHEETO-WHEETO-WHEETOWHIT, slightly faster and accented toward end (FO).

N: A weak, nonbuzzy CHIP or TSIP, almost identical to Townsend's (FO).

### **Townsend's Warbler (TOWA)**

- T: Three or 4 notes similar in pitch, followed by 2 or more high-pitched sibilant ones DZEER SZEER DZEER TSEETSEE (P); pattern variable, high and wheezy (thinner quality than Black-throated Gray Warbler), often with rising inflection throughout; birds in Washington sometimes sing a type very similar or identical to hermit's fast type (FO).
- N: CHIT or TSIP (L); almost identical to hermit (FO).

### **Hermit and Townsend's Warblers (HETO)**

These two hybridize commonly in the Cascade Range of southern Washington. Their songs are usually buzzy, extremely variable, and indistinguishable in the area of overlap. The fast song type with the clear 2-note ending has been noted as diagnostic of the Hermit Warbler by some authors, but at least in much of Washington (northern and southern Cascade Range), the Townsend's Warbler also sings this song type. Conversely, Hermit Warblers have been seen singing the supposed Townsend's type that rises throughout. For censusing purposes in areas of overlap, we have lumped the two species and call them all HETO, because of the impossibility of identification by song and the extreme difficulty of seeing them well enough to distinguish hybrids and pure types (FO).

### **Common Yellowthroat (COYE)**

- T: A rapid WITCHITY-WITCHITY-WITCHITY-WITCH (P); sometimes WICHY rather than WITCHITY (R).
- N: A husky TCHEP (P).

### **MacGillivray's Warbler (MGWA)**

- T: A rolling CHIDDLE-CHIDDLE-CHIDDLE-TURTLE-TURTLE or SWEETER-SWEETER-SWEETER-SUGAR-SUGAR, dropping in pitch on last 2 notes last 2 notes sometimes just WICK-WICK (P); somewhat buzzy, very liquid, distinctly two-parted, second part faster (FO).
- N: Loud TIK, sharper than most other warblers (U); much heavier than other warblers in region (FO).

### **Wilson's Warbler (WIWA)**

- T: A thin rapid little chatter dropping in pitch at end, CHICHICHICHI-CHICHI-CHETCHET (P); distinct sharp notes discernable, accelerates toward end as well as dropping in pitch, speed varies (FO).
- N: A soft TIMP (U); like a sweet kissing sound, similar in quality to Winter Wren's notes, but almost never doubled (FO).



### **Western Tanager (WETA)**

- T: Like a robin's song, but hoarser and faster (L); short phrases of 2 to 3 buzzy notes, very fast cadence, in groups of 4 to 8, separated by pauses, compared to Black-headed Grosbeak more hoarse and burry, less fluent and varied (FO).
- N: 1. PI-TIC or PIT-I-TIC (P); dry PIT-R-RICK (U).  
2. A clear PEE, PEE (FO).  
3. CHEE-LI, CHEE-LIP, very forceful (FO).

### **Black-headed Grosbeak (BHGR)**

- T: Rising and falling passages, resembles song of robin, but more fluent and mellow (P), faster and more varied (L); phrases strung together more than robin's or tanager's, seems like one long phrase, gives impression of drunk robin, sometimes mixes in single odd buzzy notes, slower and shorter than Townsend's Solitaire's song (FO).
- N: 1. Hard, sharp SPIK (F).  
2. Plaintive WHEE or WHEE-YOU (F).

### **Lazuli Bunting (LABU)**

- T: High and strident, well-measured phrases at different pitches, introductory notes usually paired SWEET-SWEET, CHEW-CHEW, etc. (P); resembles song of American Goldfinch (L); one pattern is a 4-note phrase followed by a 2-note phrase, another has 3 notes up, 2 down, 3 up, 2 down (FO).
- N: 1. Sharp TSIP (P).  
2. A dry buzz, ZZZD (FO).

### **Rufous-sided Towhee (RSTO)**

- T: 1. Drawn-out buzzy CHWEEEEEEEE (P); a dry trill, often with a single preceding chip discernable at close range, trails off at end like a sigh (FO).  
2. A series of musical notes on the same pitch resembling one of the many Bewick's Wren songs, CH CH CH, etc., similar in quality to song number 1, but the separate notes do not run together.
- N: 1. CHWEE or SHRENK (P); buzzy, nasal GRAHHNN, rising inflection (FO).  
2. A soft, buzzy BZZZT (FO).

### **Green-tailed Towhee (GTTO)**

- T: Variable, confused with Fox Sparrow, but less brilliant, opens with sweet notes, ending in long burry notes WEE-CHUR-CHEEEEEEE-CHURRR (P); often begins with 2 or 3 whistled notes, SWEE-TOO, followed by a jumble of short, burry trills, infrequently includes songs and calls of neighboring species (F).

### **Green-tailed Towhee (GTTO), continued**

- N: 1. A soft MEW (P,U,R); weak, ascending DWEE or DUWEE (FO).  
2. CHINK (FO).

### **Chipping Sparrow (CHSP)**

- T: A dry rattle on one pitch (P); an insectlike fast trill, like Dark-eyed Junco, but faster and less musical (FO).  
N: A faint TSIP (L); weak, slightly ascending, resembles warbler SEET notes (FO).

### **Fox Sparrow (FOSP)**

- T: Brilliant musical song usually begins with 1 or 2 clear notes, followed by a sliding note, SWEET SWEET CHEER CHILLIP CHILLIP, etc., arrangement varies (P); very similar to Green-tailed Towhee, some songs end with a CHIRP-CHIRP-CHIRP-CHIRP-PPPPPEW, the last note a cutoff, descending trill (lacking in towhee song) (FO).  
N: 1. A loud, dry CHEK (P); similar in quality to Dark-eyed Junco, but much heavier, lower (FO).  
2. TSEET (L); ascending in pitch like that of Golden-crowned Sparrow (FO).

### **Song Sparrow (SOSP)**

- T: A variable series of notes, some musical, some buzzy, usually starts with 3 to 4 bright repetition notes, SWEET, SWEET, SWEET (P); typically 3 to 4 short, clear notes followed by a buzzy TOWEE, then a trill (FO).  
N: 1. Low nasal TCHEP (P); CHIMP (U).  
2. A soft SEET (L).

### **Golden-crowned Sparrow (GCSP)**

- T: Three high whistled notes of plaintive minor quality, coming down the scale, sometimes a faint final trill (P); OH DEAR ME (R).  
N: TSEET (U); slightly ascends in pitch, similar to Fox and White-crowned Sparrows (FO).

### **White-crowned Sparrow (WCSP)**

- T: One or more plaintive or wheezy whistles on different pitches, followed by a husky trill or series of trills and CHILLIP'S (P); varies geographically, has a lazy feeling to it, in western Washington and western Oregon 2 long introductory notes followed by a slurred 3-note oscillation YOU...SEE...PRETTY-PRETTY-GIRL (FO).  
N: 1. A loud PINK (P).  
2. TSEET note similar to Golden-crowned and Fox Sparrows (FO).

### **Dark-eyed Junco (DEJU)**

- T: Loose, musical trill (P); somewhat tinny but more musical and slower than Chipping Sparrow (FO).
- N: 1. Sharp CHEK (L); similar in quality to Fox Sparrow, but lighter.  
2. Twittering notes (P); insectlike, unmusical T, T, T, etc., often given during flight (FO).  
3. Soft buzz BZZZZ (FO).

### **Red-winged Blackbird (RWBL)**

- T: A liquid, gurgling O-KA-LAY or O-KA-LEE-ONK (P).
- N: 1. A loud CHECK (P): CHACK (S).  
2. High, slurred TEE-ERR (P).

### **Brewer's Blackbird (BRBL)**

- T: A harsh, wheezy WUE-EE or KSH-EE, like the creaking of a rusty hinge (P).
- N: Harsh CHECK (P); CHUCK (R).

### **Brown-headed Cowbird (BHCO)**

- T: Bubbly and creaky, GLUG-GLUG-GLEEEE (P); a slow, bubbly, heavy trill on one pitch (FO).
- N: 1. Flight call WEEE-TITI, high whistle, 2 lower notes (P).  
2. CHUCK (P).  
3. A rattling (U) or chattering call (F).  
4. A soft TSIP (U).

### **Northern Oriole (NOOR)**

- T: A loud series of whistles CHUCKY, CHUCKY, WHEEW, WHEEW, WHEEW (U); a series of accented double notes with 1 or 2 piping notes (P).
- N: 1. A sharp SKIP (P); a clear, sweet KLEEK (F).  
2. A grating chatter (F).

### **Purple Finch (PUFI)**

- T: Fast, lively warble, resembles House Finch, but lower, shorter, less disjointed (P); sounds very hurried, notes and phrases all slurred and run together into one long phrase, resembles Warbling Vireo but faster (FO).
- N: 1. Dull, metallic TICK (P).  
2. A musical HUR-LEE (S); sometimes three syllables SWUR-D-LEEP (FO).

### House Finch (HOFI)

- T: A bright, lengthy song, loose and disjointed, frequently ends in a harsh, nasal WHEER or CHE-URR (P); song slower, less monotonic, less fluid and higher than that of Purple Finch, usually lasting at least 3 seconds (F).
- N: 1. Musical chirping calls similar to House Sparrow (P).  
2. Drawn-out, ascending note similar to last note of song (F).

### Red Crossbill (RECR)



- N: 1. A hard JIP-JIP or JIP-JIP-JIP (P);  
2. Musical WINK or YENK similar to that of White-winged Crossbill, often in series, usually when perched (FO).  
3. Nonterritorial "song" JIP-JIP-JIP-JEEAA-JEEAA (P); a variable series of whistles, trills, or warbles, often in groups of 2 or 3 notes, CHIP-CHIP-CHIP, JEEA-JEEA or JIB-JIB-JIB-JEE-JEE-JEE (F); JEEAA often ascends in pitch, notes can be hard, scratchy, clear, or musical (FO).

### White-winged Crossbill (WWCR)

- N: 1. A dry CHIF-CHIF (P); usually in 2's or 3's like Red Crossbill, but lighter, not so hard, with drier quality, slightly buzzy, other interpretations are CHET and ZIP (FO).  
2. WINK-WINK-WINK (F); given singly or in series of variable number, also described as YENK, difficult to distinguish from similar Red Crossbill notes (FO).  
3. Soft twittering nasal notes, ENK-ENK-ENK, etc., reminiscent of Red-breasted Nuthatch (FO).  
4. "Song" is a succession of loud trills on different pitches (P).

### Pine Siskin (PISI)

- N: 1. A rising, buzzy SHHHRREEEE (U).  
2. A light TIT-I-TIT (P).  
3. A scratchy SHICK, SHICK (U).  
4. A loud CLEE-IP (P).  
5. A series of wheezy, very short notes JH-JH-JH, etc. (FO).  
6. "Song" is a long, rapid jumble of notes with overall nasal quality, loud forceful, rising ZZZHRREEEE note usually included (F); similar to American Goldfinch song but more coarse and wheezy (P).

### Lesser Goldfinch (LEGO)

- T: Musical, notes often paired, more phrased than American Goldfinch's (P) and more scratchy (R); sweet twittering with interspersed upslurred notes (F).
- N: 1. Sweet, plaintive notes, either rising inflection, TEE-YEE, or falling inflection, TEE-YER (P).  
2. Plain JEE or EE-EE (F).



### Lesser Goldfinch (LEGO), continued

3. A wheezy WHZZ WHZZ WHZZ (FO).
4. A jumble of CHITTLE's or CHIPPLE's (FO).

### American Goldfinch (AMGO)

- T: Sustained, clear, light, canarylike song (P); lively series of trills, twitters, and SWEE notes (S).
- N: 1. PER-CHICK-O-REE in flight (R); TI-DEE-DI-DI (P).
2. A sweet, whining CHI-EE (F); SIWEE, with rising inflection (FO).

### Evening Grosbeak (EVGR)

- N: 1. A ringing CLEER (P); a clear PEER, falling in pitch, often in flocks so it sounds jumbled, sometimes a single buzzy note mixed in (FO).
2. A soft, clicking note (FO).
3. A short warble (P,L); a wandering, jerky warble (F); very infrequently heard (FO).

Vocalizations of several species of mammals may be mistaken for those of birds. The abundance of Douglas squirrels can be estimated by counting their calls.

### Chipmunk (*Tamias* spp.)

- N: A short, sharp, slightly musical, SPWIK, with a slightly liquid quality, often repeated at 1- to 2-second intervals (FO).

### Douglas squirrel (*Tamiasciurus douglasii*)

- T: A rattle or chatter similar to that of the Hairy Woodpecker, but longer, more musical, not as sharp, often dropping in pitch or volume (FO).
- N: Hollow-sounding, slightly musical short note, of same quality as call number 1, each one starting sharply, then trailing off in pitch and volume, often repeated endlessly at about 1-second intervals (FO).

### Comparisons Among Similar Species

NOGO	KAK: high-pitched, shrill, forceful
COHA	KE: low-pitched, not shrill
SSHA	KIK: high-pitched, shrill, weak

MOQU	WOOK? or TO-WOOK?: 4- to 9-second intervals, 2 notes when close, hollow
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NPOW	HOO: 1- to 2-second intervals, whistled
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TOSO	HEEP: single or 30 to 40 per minute, piping, weaker, higher pitched
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ALHU	VRRRIP: in display flight
RUHU	V-V-V-V-VRRIP: in display flight, stutters
NOFL	WICK, etc.: sharper, higher pitched, tinnier, longer, sometimes slowing or softening
PIWO	KEK, etc.: lower, louder, richer, ends abruptly
HAWO	rattle does not descend, faster
DOWO	whinny descends, slower, quickens toward end
HAFL	song hoarser, more emphatic, middle note buzzier, heavier, richer, lacks DEEEW-WHIP! call
DUFL	song lighter, drier, middle note less buzzy, DEEEW-WHIP! call distinctive
WWPE	ZHUWEE: longer, less sharp, more nasal, less clipped-off at end, 1 slurred note
HUVI	ZU-WEED: shorter, sharper, less nasal, clipped-off at end, 2-noted effect
BCCH	2- or 3-note whistle
MOCH	3- or 4-note whistle
BCCH	CHICK-A-DEE-DEE: clear, slower
CBCH	TSICK-I-SEE-SEE or ZHEE-CHE-CHE: hoarse, faster, not nasal
MOCH	ZICK-A-DYA-DYA: hoarse, slower, more nasal
WBNU	YANK: lower, less nasal
RBNU	ANK or ENK: higher, more nasal
BRCH	SSEEE: pure tone, clear, usually single or double, more piercing
GCKI	SEE: wiry, slightly buzzy, less piercing, usually 3 to 4 in series
AMRO	medium speed, clear, phrases distinct
TOSO	most rapid, longest duration, phrases run together, clear except for a few buzzes and short trills
SOVI	slowest, phrases separated by pauses, "conversational"
WETA	rapid, hoarse, burry, phrases distinct but very close
BHGR	rapid, phrases run together, fluent, rich, relatively varied, drunk-robin effect
VATH	KYUP: lower, less forceful
HETH	CHEK: higher, more forceful

WAVI	slowest, burry undertone, galloping feel
PUFI	most rapid, cohesive, bubbling feel, lower than HOFI
HOFI	moderate speed, longest, more disjointed, a few harsh notes, ends in nasal, harsh WHEER
OCWA	weak, colorless, changes pitch and volume, drops off at end
RSTO	musical, trails off at end like a sigh, fast, sometimes single chip preceding
CHSP	unmusical, fast, no change in pitch, volume or speed
DEJU	musical, slower, no change in pitch, volume, or speed
BGWA	} refer to detailed descriptions, very difficult to distinguish, variable
HEWA	
TOWA	
RECR	KIP or JIP: hard, not buzzy
WWCR	CHIF, CHET or ZIP: light, dry, buzzy

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<sup>3</sup> Letters in parentheses preceding the citations are the codes used in the text.

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- (FO) **Field Observers:** **Castellano, V.**, wildlife biologist, University of Washington, Seattle,; **Chappell, C.**, biological technician, USDA Forest Service,; **Kuntz, B.**, biological technician, USDA Forest Service,; **Lundquist, B.**, wildlife biologist, University of Washington, Seattle,; **Marcot, B.**, wildlife biologist, USDA Forest Service,; **Nelson, K.**, wildlife biologist, Oregon State University, Corvallis; **Sullivan, P.**, biological technician, USDA Forest Service.

## Appendix

Distributional list of birds in Douglas-fir (*Pseudotsuga menziesii* (Mirb.) Franco) forests of the Cascade Range in Oregon and southern Washington (the area west of the crest) and the Coast Ranges in Oregon and northwestern California. Information is provided for spring (May-June) in all areas and for winter (December-February) in only the southern Washington Cascades and northwestern California.

- S = species recorded in Douglas-fir forests (seedlings to sawtimber) during May and June
- W = species recorded in Douglas-fir forests from December through February

Species	Cascade Range		Coast Ranges	Northwestern California
	Southern Washington	Oregon		
Turkey Vulture	S	S	S	S
Osprey	S	S	S	S
Northern Goshawk	SW	S	S	SW
Cooper's Hawk	SW	S	S	SW
Sharp-shinned Hawk	SW	S	S	SW
Red-tailed Hawk	S	S	S	SW
Prairie Falcon				S
Peregrine Falcon				S
American Kestrel				S
Blue Grouse	SW	S	S	S
Ruffed Grouse	SW	S	S	S

Species	Cascade Range			
	Southern Washington	Oregon	Coast Ranges	Northwestern California
California Quail		S	S	S
Mountain Quail	S	S	S	SW
Wild Turkey		S		
Marbled Murrelet			S	SW
Band-tailed Pigeon	S	S	S	SW
Mourning Dove			S	SW
Western Screech-Owl	SW	S	S	SW
Flammulated Owl				S
Great Horned Owl	SW	S	S	SW
Spotted Owl	SW	S	S	SW
Barred Owl	SW	S	S	SW
Northern Saw-whet Owl	S	S	S	SW
Northern Pygmy-Owl	SW	S	S	SW
Common Nighthawk	S	S	S	S
Black Swift	S		S	
Vaux's Swift	S	S	S	S
Allen's Hummingbird				S
Rufous Hummingbird	S	S	S	S
Anna's Hummingbird			S	S
Calliope Hummingbird		S		
Northern Flicker	SW	S	S	SW
Pileated Woodpecker	SW	S	S	SW
Acorn Woodpecker				SW
Lewis' Woodpecker				S
Red-breasted Sapsucker	SW	S	S	SW
White-headed Woodpecker				SW
Hairy Woodpecker	SW	S	S	SW
Downy Woodpecker		S	S	SW
Black-backed Woodpecker	SW			
Willow Flycatcher	S	S	S	
Hammond's Flycatcher	S	S	S	S
Dusky Flycatcher		S		S
Western Flycatcher	S	S	S	S
Western Wood-Pewee	S	S	S	S
Olive-sided Flycatcher	S	S	S	S
Tree Swallow	S	S	S	S
Violet-green Swallow	S	S	S	S
Northern Rough- winged Swallow				S
Barn Swallow	S	S	S	S
Cliff Swallow				S
Gray Jay	SW	S	S	
Steller's Jay	SW	S	S	SW
Scrub Jay				SW
Common Raven	SW	S	S	SW
American Crow	S	S	S	S



Species	Cascade Range			
	Southern Washington	Oregon	Coast Ranges	Northwestern California
Black-capped Chickadee	SW	S	S	SW
Mountain Chickadee				SW
Chestnut-backed Chickadee	SW	S	S	SW
Bushtit			S	SW
White-breasted Nuthatch		S	S	SW
Red-breasted Nuthatch	SW	S	S	SW
Brown Creeper	SW	S	S	SW
House Wren		S	S	S
Winter Wren	SW	S	S	SW
Bewick's Wren		S	S	SW
Wrentit		S	S	SW
American Robin	S	S	S	SW
Varied Thrush	SW	S	S	SW
Hermit Thrush	S	S	S	SW
Swainson's Thrush	S	S	S	S
Townsend's Solitaire	S	S	S	SW
Western Bluebird			S	S
Mountain Bluebird				S
Golden-crowned Kinglet	SW	S	S	SW
Ruby-crowned Kinglet	S	S		W
Cedar Waxwing	S	S	S	SW
Hutton's Vireo	S	S	S	SW
Solitary Vireo	S	S	S	S
Warbling Vireo	S	S	S	S
Orange-crowned Warbler	S	S	S	S
Nashville Warbler	S	S	S	S
Yellow Warbler	S	S	S	S
Yellow-rumped Warbler	S	S	S	SW
Black-throated Gray Warbler	S	S	S	S
Hermit Warbler	S	S	S	S
Townsend's Warbler	S	S	S	SW
MacGillivray's Warbler	S	S	S	S
Wilson's Warbler	S	S	S	S
Common Yellowthroat			S	
Western Tanager	S	S	S	S
Black-headed Grosbeak	S	S	S	S
Lazuli Bunting			S	S
Rufous-sided Towhee	S	S	S	SW
Green-tailed Towhee				S
Chipping Sparrow	S	S	S	S
Fox Sparrow	S	S		SW
Song Sparrow	SW	S	S	SW
White-crowned Sparrow	S	S	S	
Golden-crowned Sparrow				W

Cascade Range

Species	Southern Washington	Oregon	Coast Ranges	Northwestern California
Dark-eyed Junco	SW	S	S	SW
Red-winged Blackbird	S	S	S	S
Brewer's Blackbird				S
Brown-headed Cowbird	S	S	S	S
Northern Oriole	S			S
Purple Finch	SW	S	S	SW
House Finch				S
Red Crossbill	SW	S	S	SW
White-winged Crossbill	SW			
Pine Siskin	SW	S	S	SW
Lesser Goldfinch				SW
American Goldfinch	S	S	S	S
Evening Grosbeak	SW	S	S	SW

**Carey, Andrew B.; Chappell, Christopher; Kuntz, Robert; Nelson, S. Kim; Sullivan, Paul., tech. comps. 1990.** Training guide for bird identification in Pacific Northwest Douglas-fir forests. Gen. Tech. Rep. PNW-GTR-260. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 28 p.

Bird calls and songs vary regionally, and some birds emit a variety of sounds. Existing guides are inadequate for training observers to do detailed surveys of bird communities, because more than 90 percent of birds detected are identified by the sounds they emit.

This guide summarizes existing guides and adds the observations of the compilers and other technicians who participated in extensive surveys. Four-letter codes for species names, taken from the American Ornithologists' Union, are included. A checklist by region (southern Washington, Oregon Cascade Range, Oregon Coast Ranges, and northwestern California) of birds found in Douglas-fir (*Pseudotsuga menziesii* (Mirb.) Franco) forests west of the crest of the Cascade Range completes the guide.

Keywords: Bird calls, Pacific Northwest, Douglas-fir forests.

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